1. (Once Amended) A method of generating a first tagged machine pointer to a first object referenced by a second object, said method comprising the computer-implemented steps of:

fetching a tagged numeric reference stored within the second object based on a second tagged machine pointer that points to the second object; and

generating the first tagged machine pointer as a sum including the tagged numeric reference and the second tagged machine pointer.

2. (Not Amended) The method of claim 1, wherein the sum further includes a predetermined constant.

3. (Once Amended) The method of claim 1, wherein the tagged numeric reference includes a tag portion that indicates whether the first object has a same or a different contiguity as a contiguity of the second object.

4. (Once Amended) The method of claim 3, wherein:

the tag portion includes N bits of the first tagged numeric reference that are less significant than bits used for an offset portion; and

the tag portion contains one of at least a first tag value indicating that the first object is contiguous and a second tag value indicating that the second object is non-contiguous, wherein a difference of the first tag value and the second tag value is congruent to 2^{N-1} modulo 2^{N}.

5. (Twice Amended) A method of managing memory, comprising the computer-implemented steps of:

storing a first object and a second object in a memory, wherein the first object and the second object do not overlap each other; and

storing a reference within a first object to a second object in the memory as a numeric reference that encodes a location of the second object as an offset from an address of the first object in the memory.

6. (Once Amended) The method of claim 5, further comprising the step of calculating a pointer difference between a first machine pointer to the first object and a second machine pointer to the second object to produce the numeric reference.

7. (Once Amended) The method of claim 5, wherein the first machine pointer is a first tagged machine pointer, the second machine pointer is a second tagged machine pointer, and the numeric reference is a tagged numeric reference.

8. (Not Amended) The method of claim 7, wherein the pointer difference further includes a predetermined constant.

9. (Once Amended) The method of claim 7, wherein a tag portion of the tagged numeric reference indicates whether the first object has a same or a different contiguity as a contiguity of the second object.

10. (Once Amended) The method of claim 9, wherein:

the tag portion includes N bits of the tagged numeric reference that are less significant than bits used for an offset portion of the tagged numeric reference; and

the tag portion contains one of at least a first tag value indicating that the first object is contiguous and a second tag value indicating that the second object is non-contiguous, wherein a difference of the first tag value and the second tag value is congruent to 2^{N-1} modulo 2^N.

11. (Once Amended) A computer-readable medium bearing instructions for generating a first tagged machine pointer to a first object referenced by a second object, said instructions arranged, when executed, to cause one or more processors to perform the steps of:

fetching a tagged numeric reference stored within the second object based on a second tagged machine pointer that points to the second object; and

generating the first tagged machine pointer as a sum including the tagged numeric reference and the second tagged machine pointer.

12. (Not Amended) The computer-readable medium of claim 11, wherein the sum further includes a predetermined constant.

13. (Once Amended) The computer-readable medium of claim 11, wherein the tagged numeric reference includes a tag portion that indicates whether the first object has a same or a different contiguity as a contiguity of the second object.

14. (Twice Amended) The computer-readable medium of claim 13, wherein:

the tag portion includes N bits of the first tagged numeric reference that are less significant than bits used for an offset portion; and

the tag portion contains one of at least a first tag value indicating that the first object is contiguous and a second tag value indicating that the second object is non-contiguous, wherein a difference of the first tag value and the second tag value is congruent to 2^{N-1} modulo 2^N.

15. (Twice Amended) A computer-readable medium bearing instructions for managing memory, said instructions arranged, when executed, to cause one or more processors to perform the steps of:

storing a first object and a second object in a memory, wherein the first object and the second object do not overlap each other; and

storing a reference within a first object to a second object in the memory as a numeric reference that encodes a location of the second object as an offset from an address of the first object in the memory.

16. (Once Amended) The computer-readable medium of claim 15, said instructions further arranged to cause said one or more processors to perform the step of calculating a pointer difference between a first machine pointer to the first object and a second machine pointer to the second object to produce the numeric reference.

17. (Once Amended) The computer-readable medium of claim 15, the first machine pointer is a first tagged machine pointer, the second machine pointer is a second tagged machine pointer, and the numeric reference is a tagged numeric reference.

18. (Not Amended) The computer-readable medium of claim 17, wherein the pointer difference further includes a predetermined constant.

19. (Once Amended) The computer-readable medium of claim 17, wherein a tag portion of the tagged numeric reference indicates whether the first object has a same or a different contiguity as a contiguity of the second object.

20. (Twice Amended) The computer-readable medium of claim 19, wherein:

the tag portion includes N bits of the tagged self-relative numeric reference that are less significant than bits used for an offset portion; and

the tag portion contains one of at least a first tag value indicating that the first object is contiguous and a second tag value indicating that the second object is non-contiguous, wherein a difference of the first tag value and the second tag value is congruent to 2^{N-1} modulo 2^N.

21. (New) The method of claim 1, wherein:

tag potions of the tagged numeric reference comprise N bits and store at least a first tag value and a second value indicating complementary properties; and

a difference of the first tag value and the second tag value is congruent to 2^{N-1} modulo 2^N.